

In traditional times a camp would almost always be set up near a water source, because there is usually food to be found in association with good water sources. Some of the more permanent sites can be pinpointed because grinding stones have been found on location, indicating that grass and other seeds were probably prepared for eating at the spot. It is probable that some sites were occupied seasonally over long periods, showing evidence of more than one phase of occupation, while others were merely visited on a random basis. An analysis of the artefact material provides an assessment of the past use of the site.

We are grateful to Mrs S. J. Hallam, W.A. University, for much of the information concerning the phases of occupation sites in the metropolitan area.

#### REFERENCES

- AKERMAN, K. 1969. Walyunga an Aboriginal site near Perth. *Ilchinkinja. Journal of W.A. Anthropological and Sociological Students Association*, 3.
- BUTLER, W. H. 1958. Some previously unrecorded Aboriginal artefact sites near Perth W.A. *W.A. Naturalist*, 6 (6).
- HALLAM, S. J. 1972. An archaeological survey of the Perth area, W.A. *Australian Institute of Aboriginal Studies Newsletter*, 3 (5) November 1972.
- HALLAM, S. J. 1973. Ecology and demography in southwestern Australia. *Journal of the Royal Society of W.A.*, 56 (1 & 2): 46-48.

#### PRESENTATION OF INFORMATION IN BIOLOGICAL SURVEYS OF NATIONAL PARKS

By FRANCIS G. SMITH, Director, National Parks Board of Western Australia.

In order that the information obtained from biological surveys of national parks may have some relevance to ecological management, it is essential that it be presented in an appropriate form.

It is suggested that the report of a survey should contain the following appendices:—

1. A map of vegetation types—(Plant Associations/Formations)—at the largest scale practicable. This should follow the criteria of the W.A. Vegetation Survey Committee. (See Vegetation Maps Pemberton/Irwin Inlet 1972, Busselton/Augusta 1973, Collie 1974).

2. For each vegetation type or plant community the following information is required:—

- (a) Name of Plant Association—Formation.
- (b) Location—include grid reference or latitude and longitude.
- (c) Vegetation System (if one has been recognised by earlier work or by the current survey).
- (d) Habitat—brief description of topography, climate, soil, rock and other edaphic factors.
- (e) Brief description of community with notes on effect of fires, actual or estimated time since last fire. Notes on regeneration.
- (f) Floristic Composition (table).

The table of the floristic composition should be presented in order of importance in the community under the following headings:—

Botanical name, author, frequency, height (metres or cm), form, notes:

(i) Frequency, expressed by symbols as follows:—

- Abundant (a)
- Frequent (f)
- Occasional (o)
- Rare (r)
- Local (l)
- Dominant (d)
- Co-dominant (cd)

(ii) Form expressed as

- Tree (T)
- Shrub (S)
- Herb (H)

(g) Table of fauna associated with the vegetation type or plant community under the following headings:— Scientific name, common name (if any), frequency.

(h) Notes on any special relationship between fauna and that particular vegetation type or plant community, i.e. nesting, breeding, essential food requirement, cover.

### EXAMPLE

Vegetation Type: *Encalyptus gomphocephala* woodland (B3T)

Location: Yalgorup National Park, between Lake Clifton and Martin Tank.  
Map Ref. 367938.

Vegetation System: Spearwood System (McArthur & Bettenay, 1960).

Habitat: Low sandy ridge, with acolonitic limestone 2-4 m below surface. Sand yellow to brown, leached white on surface, free drainage. Rainfall 880 mm mostly winter.

Description: Woodland in which Tuart is dominant, with understorey of trees *Agonis flexuosa* and *Banksia grandis*, tall shrubs *Acacia* spp. and *Jacksonia furcellata*. Low shrub and herb layer sparse. No evidence of Tuart regeneration. At least ten years since last fire. In recently burnt adjacent areas understorey shows rapid rate of recovery.

Floristic Composition: <i>Encalyptus gomphocephala</i> DC.	ad	20-30 m	T
<i>E. calophylla</i> R.Br.	l	20-25 m	T
<i>Agonis flexuosa</i> (Spreng.) Schau.	f	6-10 m	T
<i>Banksia grandis</i> Willd.	l	3-7 m	T
<i>Jacksonia furcellata</i> (Bonpl.) DC	l	2-3 m	S
<i>Acacia saligna</i> (Labill.) Wendle	o	2-3 m	S
<i>A. pulchella</i> R.Br.	l	-1 m	S
<i>Clematis pubescens</i> Hueg.	o	climber	
<i>Drosera stolonifera</i> Endl.	f	0.2 m	H

Fauna Present: <i>Macropus fuliginosus</i> , Western Grey Kangaroo	f
<i>Tarsipes spencerae</i> , Honey Possum	r
<i>Pseudomys albocinereus</i> , Ashy-grey Mouse	o
<i>Tachyglossus aculeatus</i> , Echidna	r
<i>Trachysaurus rugosus</i> , Bobtail	o
<i>Dromaius novaehollandiae</i> , Emu	o

Notes: Both the Grey Kangaroo and the Emu use the woodland as shelter but are not dependent upon it for food. When undisturbed these two species feed even in daylight on nearby areas of open heath, the Grey Kangaroos particularly favour the heath of the secondary coastal dunes.

It is hoped that the information from a biological survey would be rather more comprehensive than that given in the above example, which is only a guide to form.